

REMARKS

By this Amendment, claims 5 and 19 are amended. Claims 6-18 and 20-27 remain in the application. Thus, claims 5-27 are active in the application. Reexamination and reconsideration of the application are respectfully requested.

The Applicants thank the Examiner for conducting the several telephone interviews with the Applicants' undersigned representative from June 4, 2004 to June 14, 2004. The Applicants authorized the Examiner's amendment identified on pages 7-8 of the Office Action on June 14, 2004 in order to place claims 8-18 in condition for allowance. Accordingly, the Applicants thank the Examiner for kindly indicating, on page 8 of the Office Action, that claims 8-18 are allowed.

The Examiner, however, maintained the rejection of claims 5-7 and 19-27. Accordingly, the Examiner issued the final Office Action rejecting claims 5-7 and 19-27. In particular, on page 2 of the Office Action, claims 5-7, 19-23 and 25-26 were rejected under 35 U.S.C. § 102(a) as being anticipated by Keller et al. (U.S. 6,063,315). For the reasons provided below, the Applicants respectfully submit that claims 5-7 and 19-27 are clearly patentable over Keller et al.

The Applicants thank the Examiner for conducting the personal interview with the Applicants' representatives and Mr. Kayano, who is one of the inventors of the present application, on July 16, 2004. The Examiner, however, maintained the rejection of claims 5-7 and 19-27. In particular, the Examiner, with reference to Column 14, lines 49-60 of Keller et al., maintained her interpretation that Keller et al. discloses that the "first" molten thermoplastic resin which is injected from the first injection conduit 32 does not come into contact with the "second" molten thermoplastic resin which is injected from the second injection conduit 34.

In response to the July 16, 2004 interview and the Examiner's unreasonably broad interpretation of Keller et al., Mr. Kayano prepared and executed a Declaration under 37 CFR 1.132 which is submitted herewith. The Declaration, in part, establishes the following:

1. Keller et al. discloses a sequential gating of molten thermoplastic resin from multiple gates (injection conduits) into a mold cavity so as to ensure a continuous flow of molten thermoplastic resin;

2. Keller et al. discloses that the sequencing of the gates for the molten thermoplastic resin provides a continuous flow of molten thermoplastic resin without the interface of two or more wave fronts of molten thermoplastic resin. Thus, the surface formed in the mold cavity is smooth and free of knit lines (see Column 8, lines 24-35);

3. Knit lines are formed at the interface where a wave front of a “first” resin from one injection conduit meets and joins a wave front of a “second” resin from another injection conduit;

4. To avoid knit lines, which is the primary object of Keller et al., Keller et al. can only be reasonably interpreted as disclosing that there is only one wave front by sequentially injecting resin from multiple injection conduits in order to ensure a continuous flow of molten thermoplastic resin so as to prevent the formation of knit lines, which are formed when two or more wave fronts interface;

5. As illustrated in Figure 6 of Keller et al., after the “first” molten thermoplastic resin is injected through the first injection conduit 32 and arrives at the second injection conduit 34, the “second” molten thermoplastic resin is injected into the cavity through the second injection conduit 34. Then, gas is injected near the first injection conduit 32, and the first injection conduit 32 is then closed;

6. To interpret Keller et al. as disclosing that the “first” molten thermoplastic resin which is injected from the first injection conduit 32 does not come into contact with the “second” molten thermoplastic resin which is injected from the second injection conduit 34 would defeat a primary object of Keller et al., which is to provide a continuous flow of molten thermoplastic resin to avoid the creation of knit lines. That is, if the wave front of the “second” molten thermoplastic resin interfaces with the wave front of the “first” molten thermoplastic resin, a knit line will be created by the interface of these two wave fronts. As referenced above, Column 8, lines 24-35 of Keller et al. specifically discloses that “[t]he sequencing of the gates for the molten thermoplastic resin provides a continuous flow of resin throughout the mold without interfacing of two or more wave fronts of molten thermoplastic resin. Thus, the surface formed in the mold cavity is smooth and free of knit lines” (emphasis added);

7. As known in the art, an interface of material and an interface of wave fronts are markedly different from each other. An interface of material means that two or more materials come into contact with each other. On the other hand, an interface of wave fronts means that the respective wave fronts (meniscuses) of two or more fluid materials come into contact with each other. In the art of injection molding, when two or more wave fronts come into contact with each other, a knit line (weld line) is formed. However, when the wave front of a first molten thermoplastic resin comes into contact with the flow of a second molten thermoplastic resin after the wave front of the first molten thermoplastic resin has passed the injection point of the second molten thermoplastic resin, a knit line is not formed, and a continuous flow of molten thermoplastic resin is achieved; and

8. Keller et al. also discloses, in Column 14, lines 49-60, that “[t]he gating sequence is determined to control the flow of thermoplastic resin away from a first injection port sequentially to the ends of the mold cavity without interfacing of flow of thermoplastic resin from multiple drops.” Consistent with the principal object of Keller et al. to avoid the formation of knit lines which are caused when two or more wave fronts interface in the mold cavity, the terms “without interfacing of flow of thermoplastic resin from multiple drops” clearly mean that the flows of molten thermoplastic resin from multiple injection conduits do not form their common boundary in the cavity.

Accordingly, Keller et al. clearly discloses that a principal object is to avoid the creation of knit lines, which result when separate wave fronts of two or more molten thermoplastic resins interface, through a continuous flow of molten thermoplastic resin. The term “interfacing,” as known in the art, means a boundary, i.e., a point of contact. To avoid the creation of knit lines in the molded article, the broadest reasonable interpretation of Keller et al. requires that the “second” molten thermoplastic resin which is injected from the second injection conduit 34 comes into contact with the “first” molten thermoplastic resin after the wave front of the “first” molten thermoplastic resin has passed the injection point of the “second” molten thermoplastic resin at the second injection conduit 34.

The present invention provides for the injection of a first molten thermoplastic resin from a first injection cylinder into a cavity. In contrast to Keller et al., the present invention also provides for the injection of a second molten thermoplastic resin from a second injection cylinder into the cavity without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin injected into the cavity. The second molten thermoplastic resin can be injected into the cavity either concurrently with the injection of the first molten thermoplastic resin into the cavity, during the injection of the first molten thermoplastic resin into the cavity, or after the completion of the injection of the first molten thermoplastic resin into the cavity. The second molten thermoplastic resin does not come into contact with the first molten thermoplastic resin until a pressurized fluid is introduced into the second molten thermoplastic resin to thereby form a hollow portion inside the second molten thermoplastic resin and to bring the second molten thermoplastic resin into contact with the first molten thermoplastic resin, where the hollow portion does not extend to the first molten thermoplastic resin.

As a result of this inventive process, and as described in lines 21 to 27 on page 9 of the specification, a desired portion of the molded article can be reliably constituted of the first and second molten thermoplastic resins, and the form (the thickness, width and length, for example), of the portions of the molded article which are made of the first and second molten thermoplastic resins can be accurately and easily controlled.

Claims 5 and 19 each recite a method for injection molding a molded article having a hollow portion. The methods of claims 5 and 19 each comprise injecting a first molten thermoplastic resin from the first injection cylinder into the cavity through the first-molten-resin injection portion. Further, the method of claims 5 and 19 further comprise injecting the second molten thermoplastic resin from the second injection cylinder into the cavity through the second-molten-resin injection portion, without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin injected into the cavity, concurrently with the start of the injection of the first molten thermoplastic resin into the cavity, during the injection of the first molten thermoplastic resin into the cavity, or after completion of the injection of the first molten thermoplastic resin into the cavity.

Despite the Examiner's assertion to the contrary, Keller et al. does not disclose or suggest injecting the second molten thermoplastic resin from the second injection cylinder into the cavity through the second-molten-resin injection portion, without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin injected into the cavity, concurrently with the start of the injection of the first molten thermoplastic resin into the cavity, during the injection of the first molten thermoplastic resin into the cavity, or after completion of the injection of the first molten thermoplastic resin into the cavity, as recited in claims 5 and 19.

Instead, Keller et al. discloses a gas-assisted injection molding process that consists of sequentially injecting molten thermoplastic resin from multiple gates in order to obtain a continuous flow of the resin inside a mold cavity. According to the process of Keller et al., a "first" molten thermoplastic resin is injection molded (injected) into the mold cavity at a first location through a first injection conduit 32. Then, a "second" molten thermoplastic resin is injected, from a second injection conduit 34, into the mold cavity at a second location, which is spaced from the first location, substantially simultaneously with the arrival of the molten thermoplastic resin from the first location at the second location (see Column 3, lines 1-8, Column 6, lines 50-64). A sensor 46 is provided at the second location to detect when the "first" molten thermoplastic resin arrives at the second location, whereupon the controller 88 causes the second gate valve 66 to open for the "second" molten thermoplastic resin to be injected into the mold cavity at the second location (see Column 6, lines 59-64). That is, Keller et al. discloses that "when the [second] molten thermoplastic resin reaches the second drop conduit 34, the pressure detected by the second pressure detector 46 will increase, thereby indicating that the presence of the [first] molten material at the second drop conduit 34. At this time, the controller closes the first gate 64 and opens the second gate valve 66 so that the [second] molten thermoplastic resin flows through the second drop conduit 34 to a second location in the mold cavity" (see Column 7, lines 43-50). The same process is performed for the injection of a "third" molten thermoplastic resin from the third injection conduit 36 when the molten thermoplastic resin injected from the first and second injection conduits 32 and 34 is detected by the third pressure sensor 48 as arriving at the third injection conduit 36 (see Column 7, lines 52-63).

Thus, since the “second” molten thermoplastic is disclosed as being injection molded at the second location when the “first” molten thermoplastic resin arrives at the second location, Keller et al. clearly discloses that the second molten thermoplastic resin is brought into contact with the first molten thermoplastic resin at the second location as soon as the second molten thermoplastic resin is released through the second drop conduit 34 at the second location.

Therefore, Keller et al. clearly does not disclose or suggest injecting the second molten thermoplastic resin from the second injection cylinder into the cavity through the second-molten-resin injection portion, without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin injected into the cavity, concurrently with the start of the injection of the first molten thermoplastic resin into the cavity, during the injection of the first molten thermoplastic resin into the cavity, or after completion of the injection of the first molten thermoplastic resin into the cavity, as recited in claims 5 and 19.

To further illustrate that Keller et al. does not disclose or suggest injecting the second molten thermoplastic resin without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin injected into the cavity, Keller et al. also discloses that the injection molding of larger articles requires multiple drops (gates), and that all gates typically open simultaneously, where the use of multiple gates typically produce multiple knit lines (see Column 2, lines 15-17). Further, Keller et al. specifically discloses that “[t]he sequencing of the gates for the molten thermoplastic resin provides a continuous flow of resin throughout the mold without interfacing of two or more wave fronts of molten thermoplastic resin.” Thus, since Keller et al. provides that a continuous flow of molten thermoplastic resin avoids any interface between two or more wave fronts, “the surface formed in the mold cavity is smooth and free of knit lines” (see Column 8, lines 30-35).

As is known in the art, and as described above, a knit line is formed when a wave front of a “first” resin from a first injection conduit interfaces a wave front of a “second” resin from a second injection conduit. However, a primary object of Keller et al. is to avoid the creation of knit lines. Keller et al. avoids the creation of knit lines through the sequential injection of molten thermoplastic resin from multiple gates so as to provide a continuous flow of the molten

thermoplastic resin in the mold cavity. Accordingly, by disclosing a continuous flow of resin from multiple injection conduits, Keller et al. avoids the formation of knit lines. In other words, there is only one wave front in Keller et al. by sequentially injecting resin from multiple injection conduits in order to ensure a continuous flow of resin. Accordingly, to avoid the formation of knit lines, the only reasonable interpretation of Keller et al. is that Keller et al. discloses that the “second” molten thermoplastic resin is injected from the second injection conduit 34 when the “first” molten thermoplastic resin is detected as arriving at the second injection conduit 34 and after the wave front of the “first” molten thermoplastic resin has passed the injection point of the “second” molten thermoplastic resin at the second injection conduit 34.

As described above, the Examiner relies on Column 14, lines 49-60 of Keller et al. to support her conclusion that the molten thermoplastic resins from the multiple injection conduits of Keller et al. do not come into contact with each other when the molten thermoplastic resins are injected from their respective injection conduits. However, Column 14, lines 49-60 of Keller et al. discloses that “the gating sequence is determined to control the flow of thermoplastic material away from a first injection port sequentially to the ends of the cavity without interfacing of flow of thermoplastic resin from multiple drops.” Contrary to the Examiner’s interpretation, this portion of Keller et al. merely discloses that the gating sequence is determined so that the gates are opened and closed at specific times to avoid multiple injections of one of the “first”, “second” or “third” molten thermoplastic resins during the injection process. In other words, Keller et al. provides that there is no interface of flow of the “first” molten thermoplastic resin with a subsequent injection (flow) of the “first” molten thermoplastic resin. Accordingly, while the flows of molten thermoplastic resin from multiple injection conduits collide with each other, the flows of the molten thermoplastic resin do not form their common boundary in the cavity. Such a boundary appears as a knit line.

As illustrated in Figure 6 of Keller et al., when the “first” molten reaches the second drop conduit 34, the pressure detected by the second pressure sensor 46 increases, which indicates the presence of the “first” molten thermoplastic resin at the second injection conduit 34. At this time, the controller 88 closes the first gate valve 64 and opens the second gate valve 66 so

that the “second” molten thermoplastic resin flows through the second injection conduit 34 (see Column 7, lines 44-51). Similarly, when the molten thermoplastic resin from the first and second injection conduits 32 and 34 arrives at the third injection conduit, which is detected by the third pressure sensor 48, the second gate valve 66 is closed by the controller 88, and the third gate valve 68 is opened by the controller 88 (see Column 7, lines 59-63).

Therefore, by closing the gate valves in which the molten thermoplastic resin was previously flowed from, the injection molding process of Keller et al. is performed “without interfacing of flow of thermoplastic resin from multiple drops” (see Column 14, lines 49-60).

Accordingly, contrary to the Examiner’s interpretation of Keller et al., Keller et al. cannot be reasonably interpreted as disclosing that the “second” molten thermoplastic resin does not come into contact with the “first” thermoplastic resin which was previously injected into the mold cavity. Such an interpretation would cause the formation of knit lines in the molded article, because if the “first” and “second” molten thermoplastic resins do not come into contact with each other immediately upon the injection of the “second” molten thermoplastic resin after the wave front of the “first” molten thermoplastic resin has passed the injection point of the “second” molten thermoplastic resin, there will be an interface of the respective wave fronts of the “first” and “second” molten thermoplastic resins, which would cause a knit line. As described above, the primary object of Keller et al. is to provide a molded article which is free of knit lines.

Further, such an unreasonably broad interpretation would also defeat the object of Keller et al. to provide a continuous flow of resin from the injection of molten thermoplastic resin from multiple gates. If Keller et al. is unreasonably interpreted as disclosing that the “first” and “second” molten thermoplastic resins do not come into contact with each other immediately upon the insertion of the “second” molten thermoplastic resin, there will not be a continuous flow of molten thermoplastic resin, in addition to the inevitable creation of knit lines.

Accordingly, Keller et al. clearly discloses that the first molten thermoplastic resin is substantially simultaneously brought into contact with the second molten thermoplastic resin at the second location when the second molten thermoplastic resin flows through the second drop conduit 34 at the second location (see Column 7, lines 44-51).

Therefore, Keller et al. clearly does not disclose or suggest injecting the second molten thermoplastic resin from the second injection cylinder into the cavity through the second-molten-resin injection portion, without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin injected into the cavity, concurrently with the start of the injection of the first molten thermoplastic resin into the cavity, during the injection of the first molten thermoplastic resin into the cavity, or after completion of the injection of the first molten thermoplastic resin into the cavity, as recited in claims 5 and 19.

While Keller et al. clearly does not disclose or suggest injecting the second molten thermoplastic resin without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin, claims 5 and 19 have been amended to further distinguish the inventions of claims 5 and 19 from Keller et al. and the prior art of record so as to expedite the allowance of the present application.

In particular, claims 5 and 19 have each been amended to recite introducing a pressurized fluid into the second molten thermoplastic resin in the cavity from the pressurized-fluid portion during the injecting of a second molten thermoplastic resin into the cavity or after completion of the injecting the second molten thermoplastic resin into the cavity thereby to form the hollow portion only inside the second molten thermoplastic resin, which hollow portion does not extend to the first molten thermoplastic resin, and to bring the second molten thermoplastic resin into contact with the first molten thermoplastic resin.

As described above, Keller et al. clearly discloses that the “second” molten thermoplastic resin is brought into contact with the “first” molten thermoplastic resin immediately upon the injection of the “second” molten thermoplastic resin from the second injection conduit 34. Further, to avoid the formation of a knit line and to ensure a continuous flow of molten thermoplastic resin, the wave front of the “second” molten thermoplastic resin of Keller et al. is brought into contact with the “first” molten thermoplastic resin after the wave front of the “first” molten thermoplastic resin passes the second injection conduit 34.

Keller et al. also discloses that gas is injected in the cavity to assist in the distribution of the molten thermoplastic resin to the edges of the mold cavity (see Column 3, lines 9-10). In

particular, as illustrated in Figure 6, upon the arrival of the “first” molten thermoplastic resin from the first injection conduit 32 at the second injection conduit 34, the “second” molten thermoplastic resin is injected from the second injection conduit 34, and gas is injected from the first air injection conduit 38 near the first injection conduit 32. The first injection conduit is then closed. Then, upon the arrival of the molten thermoplastic resin from the first and second injection conduits 32 and 34 at the third injection conduit 36, gas is injected from the second air injection conduit 40 after the second injection conduit 34 is closed.

Keller et al. also discloses that

After the molten thermoplastic resin has been injected into the mold cavity through the third drop conduit 36 for a predetermined period of time or, alternatively, until the pressure detected by the third pressure sensor 48 reaches a predetermined value, the controller will open the gas control valves 78, 80 and 82 and pressurized gas is supplied through the gas supply conduits 70, 72 and 74 to the gas injection conduits 38, 40 and 42 and into the mold cavity at the rib cavity surface 30. Pressurized gas entering the mold cavity through the gas-injection conduits 38, 40 and 42 forces the molten thermoplastic resin along the rib cavity to form a hollow channel therein and forces the thermoplastic resin to the ends of the mold cavity. (Column 7, line 64 to Column 8, line 9)

Accordingly, since Keller et al. discloses that molten thermoplastic resin is continuously and sequentially injected from the first through third injections conduits, the pressurized gas is inserted into the mold cavity to form the hollow channel only “after the molten thermoplastic resin has been injected into the mold cavity through the third conduit 36.” Therefore, the hollow channel which is formed in the molten thermoplastic resin to force the resin to the ends of the mold cavity is formed in each of the “first”, “second” and “third” molten thermoplastic resins.

Claims 5 and 19, however, recite that the hollow portion is formed only inside the second molten thermoplastic resin, that the hollow portion does not extend to the first molten thermoplastic resin, and that the formation of the hollow portion inside only the second molten thermoplastic resin brings the second molten thermoplastic resin into contact with the first molten thermoplastic resin.

Instead, Keller et al. discloses that the “second” molten thermoplastic resin comes into contact with the “first” molten thermoplastic resin immediately upon the injection of the

“second” molten thermoplastic resin, that the “third” molten thermoplastic resin comes into contact with the molten thermoplastic resin from the first and second injection conduits 32 and 34 immediately upon the injection of the “third” molten thermoplastic resin, and that the pressurized gas is inserted into the mold cavity to form the hollow channel only after the molten thermoplastic resin has been injected into the mold cavity through the third injection conduit 36.

Accordingly, Keller et al. clearly does not disclose or suggest introducing a pressurized fluid into the second molten thermoplastic resin in the cavity from the pressurized-fluid portion during the injecting of a second molten thermoplastic resin into the cavity or after completion of the injecting the second molten thermoplastic resin into the cavity thereby to form the hollow portion only inside the second molten thermoplastic resin, which hollow portion does not extend to the first molten thermoplastic resin, and to bring the second molten thermoplastic resin into contact with the first molten thermoplastic resin, as recited in claims 5 and 19.

Therefore, the Applicants respectfully submit that claims 5 and 19 are clearly not anticipated by Keller et al. since Keller et al. fails to disclose each and every limitation as recited in claims 5 and 19.

On page 6 of the Office Action, claims 24 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Keller et al. in view of Siano (U.S. 6,475,413). For the following reasons, the Applicants respectfully submit that Siano clearly does not cure the deficiencies of Keller et al. for failing to disclose or suggest each and every limitation of claims 5 and 19.

Siano discloses a process for co-injecting two or more materials from multiple points of injection. One set of the points and nozzles is reserved for injecting a first material, a skin material, and another set of the points and nozzles is reserved for injecting a second material, a core material. That is, at least one nozzle is dedicated for injecting only the first material, and at least one nozzle is dedicated for injecting only the second material (see Column 2, line 50 to Column 3, line 7). With reference to Figure 1, Siano discloses that a first nozzle 3 is dedicated for injecting the first material, and a second nozzle 4 is dedicated for injecting the second material. The first and second materials are stored in separate distributors 9 and 10 so as to ensure that the first and second materials are injected from their respective nozzle 3 and 4

independently from each other (see Column 3, lines 21-25). With reference to Figure 2, Siano also discloses that more than one of the skin nozzles 3a-3c for the first material and more than one injection of the core nozzles 4a-4g for the second material can be provided (see Column 3, lines 55-58).

Siano further discloses that a predetermined amount of skin material (the first material) is initially injected through the skin nozzles 3a-3c. The amount of skin material injected is substantially the amount which is required for the skin on the molded product, and the injected skin material “extends inside the mold until it reaches and covers the areas where the nozzles for injecting the core material 4a-4g are located.” Then, the core material (second material) is injected through the core nozzles 4a-4g, and the injected skin material is “pushed and distributed around the mould by the core material injected through its related nozzles 4a-4g” (see Column 4, lines 56-65).

Accordingly, by disclosing that the second material, upon being injected from the core nozzles 4a-4g, pushes and distributes the first material around the mold cavity, Siano clearly discloses that the second material is immediately brought into contact with the injected first material.

Therefore, similar to Keller et al., Siano also clearly does not disclose or suggest injecting the second molten thermoplastic resin from the second injection cylinder into the cavity through the second-molten-resin injection portion, without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin injected into the cavity, concurrently with the start of the injection of the first molten thermoplastic resin into the cavity, during the injection of the first molten thermoplastic resin into the cavity, or after completion of the injection of the first molten thermoplastic resin into the cavity, as recited in claims 5 and 19.

Siano also discloses that gas is injected through gas injection points 12 during the molding of the panel. The gas is injected to create some hollow sectors to make the panel lighter and to avoid any draw after molding (see Column 3, lines 58-63 and Figure 2).

Accordingly, by disclosing that the core material comes into contact with the skin material immediately upon being injected from the core nozzles 4a-4g and that gas is injected

during the molding process, Siano clearly does not disclose or suggest injecting the gas into the second material to form the hollow portion only inside the second material and to bring the second material into contact with the first material.

Therefore, similar to Keller et al., Siano also does not disclose or suggest introducing a pressurized fluid into the second molten thermoplastic resin in the cavity from the pressurized-fluid portion during the injecting of a second molten thermoplastic resin into the cavity or after completion of the injecting the second molten thermoplastic resin into the cavity thereby to form the hollow portion only inside the second molten thermoplastic resin, which hollow portion does not extend to the first molten thermoplastic resin, and to bring the second molten thermoplastic resin into contact with the first molten thermoplastic resin, as recited in claims 5 and 19.

Accordingly, neither Keller et al. nor Siano disclose or suggest each and every limitation recited in claims 5 and 19. Therefore, no obvious combination of Keller et al. and Siano would result in the inventions of claims 5 and 19 since Keller et al. and Siano, either individually or in combination, fail to disclose or suggest each and every limitation of claims 5 and 19. Furthermore, the Applicants respectfully submit that the clear distinctions discussed above are such that a person having ordinary skill in the art at the time the invention was made would not have been motivated to modify Keller et al. and Siano, or to make any combination of the references of record, in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 5 and 19. Therefore, it is submitted that claims 5 and 19, as well as claims 6-7 and 20-27 which depend therefrom, are clearly allowable over the prior art as applied by the Examiner.

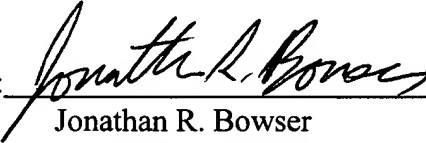
In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

A fee and a Petition for a one-month Extension of Time are filed herewith pursuant to 37 CFR § 1.136(a).

Respectfully submitted,

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